

Psittacosis



Section 1:

ABOUT THE DISEASE

A. Etiologic Agent

Chlamydophila psittaci (formerly *Chlamydia psittaci*) is an intracellular bacterium that causes psittacosis.

B. Clinical Description

The clinical presentation of psittacosis may include fever, headache, rash, myalgia (muscle aches), chills, and upper or lower respiratory tract disease. Systemic illness can occur with pneumonia. A cough may or may not be present, and respiratory symptoms often seem milder than would be expected based on chest x-ray findings. Human disease can be severe (including encephalitis and myocarditis), especially in untreated elderly people, although it is usually mild or moderate for others. Relapses of illness may occur.

C. Vectors and Reservoirs

C. psittaci is found primarily in psittacine birds (parrots, parakeets, macaws, love birds, and cockatoos). Pigeons and some poultry (turkeys, geese, and ducks) may also shed the infectious agent.

D. Modes of Transmission

Human illness occurs from inhalation of the bacteria in dried droppings, secretions, and dust from feathers of infected birds. Many seemingly healthy birds may shed the agent when stressed by crowding or transport. Pet birds are often implicated, especially when owners clean a cage containing dried droppings. Occupational exposure can also occur when workers are exposed to areas with contaminated dust during clean up, repair, or demolition. Laboratory-acquired infections have occurred as well. Farms or rendering plants may also be a source of exposure. *C. psittaci* is resistant to drying and can remain infectious for several months. Person-to-person transmission (through paroxysmal coughing during acute illness) has rarely been reported and is not considered to present a significant risk.

E. Incubation Period

The incubation period for psittacosis can range from 1–4 weeks, but is usually 7–14 days.

F. Period of Communicability or Infectious Period

Infected birds, including those that appear to be healthy, can be lifetime carriers or can have continuous or intermittent shedding periods of weeks or even months. If humans are contagious at all, it is during paroxysmal coughing with acute illness.

G. Epidemiology

Psittacosis occurs worldwide and year-round. Most human cases are sporadic. Human outbreaks of psittacosis occasionally occur in individual households, pet shops, aviaries, and avian exhibits in zoos. Outbreaks among

birds can occur in poultry flocks or in other groups of birds, such as in pet stores. Quarantine of imported birds and treatment of infected birds with antibiotics reduce the risk of disease transmission from birds.

H. Bioterrorist Potential

C. psittaci is considered by the Centers for Disease Control and Prevention (CDC) as a Category B bioterrorist agent. If acquired and properly disseminated, *C. psittaci* could cause a serious public health challenge.



Section 2:

REPORTING CRITERIA AND LABORATORY TESTING

A. What to Report to the Massachusetts Department of Public Health (MDPH)

Report any of the following:

- ◆ Isolation of *C. psittaci* from respiratory secretions;
- ◆ Four-fold or greater increase in antibody against *C. psittaci* by complement fixation (CF);
- ◆ Microimmunofluorescence (MIF) to a reciprocal titer of ≥ 32 between paired acute- and convalescent-phase serum specimens;
- ◆ Presence of immunoglobulin M antibody (IgM) against *C. psittaci* by MIF to a reciprocal titer of ≥ 16 ;
- ◆ A single antibody titer ≥ 32 by CF or MIF in a serum sample obtained after onset of symptoms in a symptomatic person who is epidemiologically-linked to a confirmed human or avian case.

Note: See Section 3C for information on how to report a case.

B. Laboratory Testing Services Available

The MDPH State Laboratory Institute (SLI) does not provide laboratory services for diagnosing psittacosis. However, the SLI Virus Serology Laboratory can arrange for serum samples to be forwarded to the CDC for testing.

For additional information on testing or specimen submission, contact the SLI Virus Serology Laboratory at (617) 983-6396. Please call the laboratory prior to specimen submission.



Section 3:

REPORTING RESPONSIBILITIES AND CASE INVESTIGATION

A. Purpose of Surveillance and Reporting

- ◆ To help identify the source (e.g., pet stores, a facility with excess dust or hidden bird droppings), and to prevent further transmission.
- ◆ To identify and control outbreaks.

B. Laboratory and Health Care Provider Reporting Requirements

Psittacosis is reportable to the local board of health (LBOH). The MDPH requests that health care providers immediately report to the LBOH in the community where the case is diagnosed, all confirmed or suspect cases of psittacosis, as defined by the reporting criteria in Section 2A.

Laboratories performing examinations on any specimens derived from Massachusetts residents that yield evidence of *C. psittaci* infection shall report such evidence of infection directly to the MDPH within 24 hours.

C. Local Board of Health (LBOH) Responsibilities

Reporting Requirements

MDPH regulations (*105 CMR 300.000*) stipulate that psittacosis is reportable to the LBOH and that each LBOH must report any confirmed case of psittacosis or suspect case of psittacosis, as defined by the reporting criteria in Section 2A. Cases should be reported to the MDPH Bureau of Communicable Disease Control, Office of Integrated Surveillance and Informatics Services (ISIS) using an official MDPH *Psittacosis Case Report Form* (found at the end of this chapter). Refer to the *Local Board of Health Timeline* at the end of this manual's *Introduction* section for information on prioritization and timeliness requirements of reporting and case investigation.

Under *105 CMR 300.140, Reporting of Animal Diseases with Zoonotic Potential by Veterinarians*, any veterinarian or LBOH with knowledge of an animal disease potentially infectious to humans must also report the disease to the Massachusetts Department of Agricultural Resources (MDAR), Division of Animal Health, Dairy Services, and Biosecurity (DAH). Specific diseases in animals which veterinarians must also report directly to MDPH are anthrax, plague, West Nile virus infection, and Eastern equine encephalitis virus infection. For questions related to psittacosis in animals or to report a suspect case of psittacosis infection in an animal, contact the DAH at (617) 626-1795 or fax the information to the DAH at (617) 626-1850.

Case Investigation

1. It is the responsibility of the LBOH to complete a MDPH *Psittacosis Case Report Form* (found at the end of this chapter) by interviewing the case and others who may be able to provide pertinent information. Much of the information required on the form can be obtained from the health care provider or from the medical record.
2. Use the following guidelines to assist in completing the form:
 - a. Accurately record the case's demographic information, including full name and address.
 - b. Record the date of symptom onset, therapy received, and outcome of disease (e.g., recovered, died).
 - c. Complete questions on the type(s), date(s), and result(s) of any diagnostic tests performed.
 - d. Use the approximate incubation period range for psittacosis (1–4 weeks) to record exposure history. Specifically, focus on the period beginning about one week prior to the case's onset date back to approximately four weeks before onset for the following exposures:
 - i. Occupation/duties: Determine the occupation of the case. Determine whether the case had any occupational exposure to birds or other animals (e.g., farmer, pet store worker).
 - ii. Bird contact: Ask the case about contact with birds (psittacine birds, pigeons, domestic fowl, or other birds). If possible, indicate the type(s), number of bird(s), and health of the bird(s) to which the case was exposed.
 - iii. Contact with a human case of psittacosis: Ask the case if he/she had recent contact with a person who has/had pneumonia.
 - iv. Indicate where and when any of the above exposures occurred.

- e. Investigate the source of infection. Record any information regarding the location, health, and testing of birds suspected as the case's source of infection.
 - f. Record physician contact information, hospitalization dates, and location (if applicable) in the "Remarks" section.
 - g. If you have made several attempts to obtain case information but have been unsuccessful (e.g., the case or health care provider does not return your calls or respond to a letter, or the case refuses to divulge information or is too ill to be interviewed), please fill out the form with as much information as you have gathered. Please note on the form the reason(s) why it could not be filled out completely.
3. After completing the form, attach laboratory report(s) and fax or mail (in an envelope marked "Confidential") to ISIS. The confidential fax number is (617) 983-6813. Call ISIS at (617) 983-6801 to confirm receipt of your fax. The mailing address is:

MDPH, Office of Integrated Surveillance and Informatics Services (ISIS)
305 South Street, 5th Floor
Jamaica Plain, MA 02130
Fax: (617) 983-6813

4. Institution of disease control measures is an integral part of case investigation. It is the responsibility of the LBOH to understand, and if necessary, institute the control guidelines listed in Section 4.



Section 4:

CONTROLLING FURTHER SPREAD

A. Isolation and Quarantine Requirements (*150 CMR 300.200*)

Minimum Period of Isolation of Patient

No restrictions.

Minimum Period of Quarantine of Contacts

No restrictions.

B. Protection of Contacts of a Case

None.

C. Managing Special Situations

Known Exposure to Birds

If the case had a known bird exposure, contact the DAH at (617) 626-1795. They will evaluate whether any control measures are needed for the suspect bird(s).

Disease in Birds

Psittacosis diagnosed in a bird is reportable to the DAH at (617) 626-1795. They, in turn, will notify the MDPH Division of Epidemiology and Immunization and the LBOH. If evidence suggests that humans exposed to infected birds have become sick with psittacosis, the LBOH will be asked to assist the MDPH Division of Epidemiology and Immunization in investigating the situation, ensuring that any sick persons receive medical attention and that exposed individuals are educated about their potential risk. In cases without human illness, the LBOH should be aware of the situation so that concerned individuals can be given information about psittacosis, their risk of exposure, and the need to see a physician if they have been exposed and if they develop respiratory illness.

When a bird in a pet store or one recently purchased from a pet store has been diagnosed with psittacosis, control measures in birds may be instituted by the DAH, whether or not human cases have occurred as a result of exposure to the diseased bird. These measures could include quarantine, treatment of exposed birds, and proper disinfection of cages and other surfaces. Other control measures—including notifying the pet store owner and workers of the diagnosis and their possible risk of disease, as well as notifying the public who may have visited the store, by posting public health notices at the store—would be taken in collaboration with the MDPH Division of Epidemiology and Immunization. In addition, depending on the situation, the DAH may contact individuals who have purchased birds from the facility to inform them about psittacosis, about the possibility that their birds may be carriers, and about the potential risks to their health.

In addition to pet shops, there are other high-risk environments in which psittacosis can occur (e.g., poultry farms). In the situation where a diseased bird is identified, control measures similar to those described above (e.g., quarantine, treatment of exposed birds, disinfection of the animal's environment, and notification of exposed individuals about their risk for disease) would be instituted by the DAH, in collaboration with the MDPH Division of Epidemiology and Immunization.

For any situation or questions involving the disease in birds, contact the DAH at (617) 626-1795 for more information. For information about the risk to humans, contact the MDPH Division of Epidemiology and Immunization at (617) 983-6800 or (888) 658-2850.

Reported Incidence Is Higher Than Usual/Outbreak Suspected

If the number of cases in your city/town is higher than usual or if you suspect an outbreak, investigate to determine the source of infection and the mode of transmission. A common source, such as a cluster of sick birds in a pet store, should be sought, and applicable preventive or control measures should be instituted. See the *Disease in Birds* section for more information. Consult with the epidemiologist on-call at the MDPH Division of Epidemiology and Immunization at (617) 983-6800 or (888) 658-2850. The Division can help determine a course of action to prevent further cases and can perform surveillance for cases across town lines, which would otherwise be difficult to identify at the local level.

D. Preventive Measures

Environmental Measures

See Section 4C for information.

Personal Preventive Measures/Education

To avoid exposure, the MDPH recommends that:

- ◆ Birds should be obtained only from a licensed pet store or aviary.

- ◆ Pet owners and animal handlers should be made aware of the dangers of household or occupational exposure to infected birds and the risk of inhalation of dried bird droppings, even from seemingly healthy birds who can shed the organism intermittently. The organism is environmentally labile but can remain infectious for several months if protected by organic matter. Medical personnel who take care of people in poultry processing plants or other workers in high-risk occupations should learn to include psittacosis in their differential diagnosis for workers who become sick with febrile illness and myalgia.
- ◆ Psittacine birds that are bought, traded, or otherwise procured should be raised and handled in a way that prohibits psittacosis spread. Tetracycline can be used to control or prevent disease in birds, although treatment failures can occur.
- ◆ Any pet stores, farms, or processing plants that are epidemiologically-linked to human psittacosis should be part of a surveillance effort to identify other cases. Any infected birds should be treated or destroyed, and the environs should be thoroughly disinfected.
- ◆ All persons in contact with infected birds or contaminated materials should wear appropriate personal protective equipment to decrease the risk of exposure. Protective clothing, gloves, and an appropriately fitted respirator (N95 or higher rating) should be used when cleaning cages or handling infected birds.
- ◆ Precautions should be used against aerosolization of contaminated materials while cleaning cages by wetting the cage with a disinfectant solution.

A “Psittacosis in Birds and People” Public Health Fact Sheet is available from the MDPH Division of Epidemiology and Immunization or on the MDPH website at www.mass.gov/dph. Click on the “Publications and Statistics” link, and select the “Public Health Fact Sheets” section under “Communicable Disease Control.”



ADDITIONAL INFORMATION

The following is the formal CDC surveillance case definition for psittacosis. It is provided for your information only and should not affect the investigation and reporting of a case that fulfills the criteria in Section 2A of this chapter. (The CDC and the MDPH use the CDC case definitions to maintain uniform standards for national reporting.) For reporting to the MDPH, always use the criteria outlined in Section 2A.

Note: The most up-to-date CDC case definitions are available on the CDC website at www.cdc.gov/epo/dphsi/casedef/case_definitions.htm.

Clinical Description

An illness characterized by fever, chills, headache, photophobia, cough, and myalgia.

Laboratory Criteria for Diagnosis

One of the following:

- ◆ Isolation of *C. psittaci* from respiratory secretions;
- ◆ Four-fold or greater increase in antibody against *C. psittaci* by complement fixation (CF);
- ◆ Microimmunofluorescence (MIF) to a reciprocal titer of ≥ 32 between paired acute- and convalescent-phase serum specimens; or
- ◆ Presence of IgM against *C. psittaci* by MIF to a reciprocal titer of ≥ 16 .

Case Classification

Probable	A clinically compatible case that is epidemiologically-linked to a confirmed case or that has supportive serology (e.g., <i>C. psittaci</i> titer of ≥ 32 in one or more serum specimens obtained after onset of symptoms).
Confirmed	A clinically compatible case that is laboratory-confirmed.



REFERENCES

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“Compendium of Measures to Control *Chlamydophila psittaci* (Formerly *Chlamydia psittaci*) Infection among Humans (Psittacosis) and Pet Birds, 2004.” National Association of State Public Health Veterinarians. <www.nasphv.org/83416/84002.html>.

Heymann, D., ed. *Control of Communicable Diseases Manual, 18th Edition*. Washington, DC, American Public Health Association, 2004.

MDPH. *Regulation 105 CMR 300.000: Reportable Diseases, Surveillance, and Isolation and Quarantine Requirements*. MDPH, Promulgated November 4, 2005.

Oregon Health Division. *Investigative Guidelines: Psittacosis*. Oregon Health Division, February 1995.



FORMS & WORKSHEETS

Psittacosis

Psittacosis



LBOH Action Steps

This form does not need to be submitted to the MDPH with the case report form. It is for LBOH use and is meant as a quick-reference guide to psittacosis case investigation activities.

LBOH staff should follow these steps when psittacosis is suspected or confirmed in the community. For more detailed information, including disease epidemiology, reporting, case investigation and follow-up, refer to the preceding chapter.

- ☐ Notify the MDPH Division of Epidemiology and Immunization, at (617) 983-6800 or (888) 658-2850, to report any suspect or confirmed case(s) of psittacosis.
- ☐ To report a case or suspect case of psittacosis in a bird, contact the Massachusetts Department of Agricultural Resources (MDAR), Division of Animal Health, Dairy Services and Biosecurity (DAH) at (617) 626-1795 or fax the information to the DAH at (617) 626-1850.
- ☐ Assist MDPH with obtaining clinical specimens needed for laboratory confirmation, if necessary.
- ☐ Determine whether or not the case had a known bird exposure.
- ☐ Identify other potentially exposed persons.
- ☐ Fill out a MDPH *Psittacosis Case Report Form* (attach laboratory results).
- ☐ Send the completed case report form (with laboratory results) to the MDPH Bureau of Communicable Disease Control, Office of Integrated Surveillance and Informatics Services (ISIS).